



Perf Newsletter

85th Meeting of the Petroleum Environmental Research Forum (PERF)

**Water Conservation: Preserve, Reduce,
Recycle and Reuse**

&

**Waste Minimization and Management from
Upstream and Downstream- Challenges and
Opportunities**

March 10-11, 2012

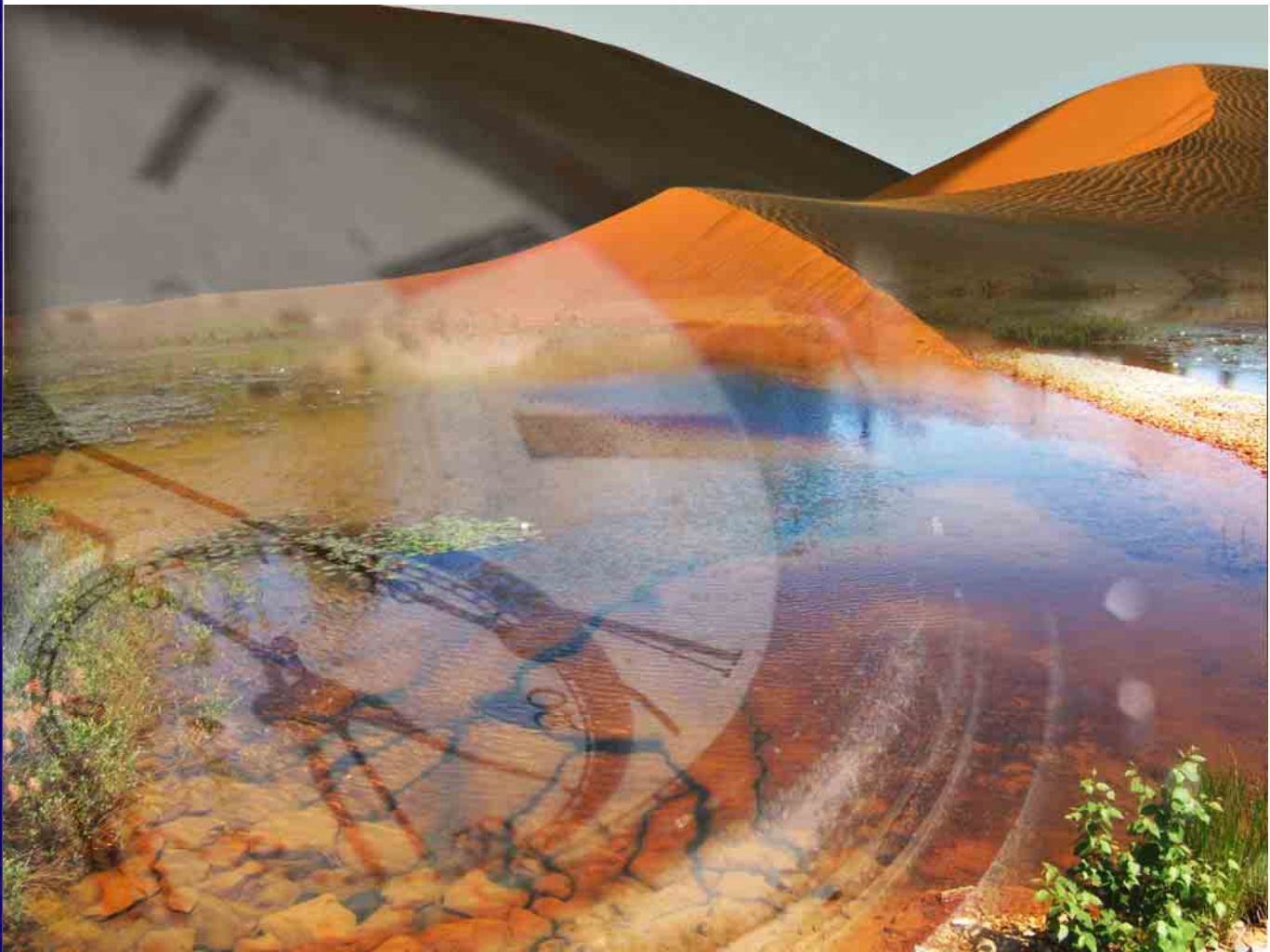




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The 85th PERF Meeting

March 10th - 11th

The 85th PERF Meeting will be hosted by Saudi Aramco at their Technical Exchange Center in Dhahran, Saudi Arabia on March 10th to 11th, 2012.

أرامكو السعودية
Saudi Aramco



The two themes for the meeting are:

“Water Conservation: Preserve, Reduce, Recycle & Reuse”

and **“Waste Minimization and Management from Upstream**

and Downstream- Challenges and Opportunities”. The agenda

is under preparation and will be posted on the PERF website soon, and topics proposed for discussion include:

Water Conservation Track

- Optimizing remedial alternatives for potentially impacted aquifers based on risk assessment (case studies);
- Use of Compound Specific Isotope Analysis in selecting appropriate groundwater remediation technologies
- Aquifer recharge in arid regions
- Water conservation: best practices for up-stream and down-stream processes
- Produced water management; reuse and disposal
- Advanced desalination technologies
- Water intake design aspects
- Use of nanotechnology in monitoring and remediation applications

Waste Minimization Track

- Oil and gas waste management (Drilling & Oily waste, Mercury, Spent catalyst & caustic)
- Recycling and reuse opportunities
- Remediation of contaminated sites

Major oil companies from Arabian Gulf countries (Bahrain, Kuwait, Oman, Qatar, UAE) will be attending, as well as other North American and European based oil and gas companies. Dinners and cultural events are also planned. The full

meeting agenda, when finalized, as well as registration and logistics information are available on the PERF website. In order to ensure timely receipt of any required visas, please register by January 30, 2012. For more information, please contact Ramzi Hejazi at ramzi.hejazi@aramco.com.



Hotel Accommodations & Transportation to Venue

Each person is responsible for making his or her own hotel reservation. Hotels in nearby Al-Khobar include Holiday Inn, Movenpick and Le Meridien. A special rate of US\$213 per night (breakfast included) has been arranged at the Movenpick Hotel. Contact Mr. Essam AbdulAziz at abdulaziz.essam@moevenpick.com or +966-38984999 and mention “PERF Saudi Aramco” by February 10, 2012 to obtain this special rate. Rooms are not blocked, so please register soon. A shuttle bus will be provided for transportation between the Movenpick Hotel and Saudi Aramco’s Technical Exchange Center.

Entry Visas

Saudi Aramco will provide assistance for all non GCC(Gulf Cooperation Council) citizens that require a visa to enter Saudi Arabia “GCC countries are Saudi Arabia, Kuwait, Bahrain, Qatar, Oman and UAE”. Please send a scanned copy of your passport photo page, your title and complete address to Ramzi Hejazi no later than January 31, 2012.

Airports

King Fahad International Airport (KFIA), Dammam, Saudi Arabia. Taxis are available at the airport. The hotels are about 45 minutes by taxi from the airport. This is the closest airport to Dhahran.

Bahrain International Airport (BIA), Manama, Bahrain. Taxis are available at the airport and travel to Dhahran is about 1 to 2 hours via the King Fahad Causeway.

Airlines

Airlines flying into KFIA Dammam: Delta/KLM, United/Lufthansa, Emirates, Qatar and Saudi Arabian. Airlines flying into Bahrain: American/British Air, Delta/KLM, United/Lufthansa, Emirates, Qatar, and Gulf.

Dhahran Weather in March

Avg. high	78°f	25°c
Avg. low	58°f	20°c
Avg. rain	1.4 in.	35 mm
Avg precipitation days		16

Source: Wikipedia

Dhahran (Arabic *aḏ-Ḍahrān*) is a city located in Saudi Arabia's Eastern Province, and is a major administrative center for the Saudi oil industry. Large oil reserves were first identified in the Dhahran area in 1931.

Source: Wikipedia





Membership News

New PERF Board and Officers

Under PERF's charter, every two years Officers and Directors are elected by the members and associate members of PERF. During the Fall meeting in Bartlesville, the officers and directors for 2012-2013 were approved as listed below:

Officers:

Chair – Veronica Blackwell, Chevron

Vice Chair – Meredith Gustafsson,
ExxonMobil

Treasurer – Karen Haynes, Shell

Secretary/Web Master – Frederic
Perie/Elisabeth Bonneville, Total

At Large Members:

Heide Mairs, ExxonMobil

Dave Fashimpaur, BP

Bruce Randolph, ConocoPhillips

Paulo Negrais Seabra, Petrobras

Ramzi Hejazi, Saudi Aramco

Past Chair – Todd Ririe, BP

Legal Counsel:

F. Joseph Gormley, Esq.

PERF Welcomes New Members

Nalco has recently completed the membership process, and PERF officially welcomes them to the organization. Nalco has appointed Jeff Gardenhire as its PERF representative. Many readers perhaps had the chance to meet Jeff at the Spring Meeting.

Three other companies have nearly completed the membership process, and PERF looks forward to welcoming them very soon.





Project Proposals

PERF 2011-07: Best flaring practices

Proposed by Total

Driven by locally stringent regulatory conditions, US petrochemical plants are under tight scrutiny and pressure to control and reduce VOCs emission at the flare. As there is room for interpretation of the impact of the emitted substances on environment and specifically on air quality, it is consequently possible that there is also some room for interpretation of the threshold values which could be considered as protective for the environment. There is a significant risk that this would trigger excessively rigorous request from the administration, and incur excessive cost with no benefit for the environment.

This project aims to aid compliance with current and future regulation by establishing best practices for flaring VOCs and HR VOCs in order to come up with proactively defined emission threshold values, based on current knowledge of flaring techniques and operations. For more information, contact Frederic Perie at Total at Frederic.perie@total.com

PERF 2011-06: Improve Estimation Methods of Air Emissions from Cooling Towers

Proposed by BP and Chevron

Driven by recent heat exchanger regulations, US refineries have started collecting new data on air emissions from cooling towers. Before this actual emission data was available, EPA collected emissions inventory data by Section 114 Information Collection Request, and identified cooling towers as a significant source of HAPs using the EPA Emission Estimation Protocol. This project aims to aid compliance with new regulations and refine emission estimates to ultimately improve risk estimates. These three parts are currently being considered for the scope of work: (1) reviewing industry-wide ICR cooling tower data, (2) collecting blinded sampling data to develop an industry baseline, and (3) sampling method verification to determine adequacy or need for improvement. Many member companies showed interest when this project was proposed at the November 2011 PERF meeting. The next step is to further explore member company interest and get input on the scope of work. For more information contact Dave Fashimpaur (dave.fashimpaur@bp.com)



Project Proposals

PERF 2011-05: Comparison of Water Discharge Models

Proposed by Total

During the most recent PERF meeting, a project proposal was presented by Ben Kampala of TOTAL E&P that had as its objective to compare the various produced water discharge models that are currently being used by E&P companies. The proposed approach was to generate and compare modelled results from several models drawn from a common set of input parameters. It is projected that this project can be done at a low cost, have no confidentiality issues (by use of existing, published data or a theoretical simulation case), and would provide a good comparison of model performance between OOC, DREAM, MIKE 3D, CORMIX (and others). Several companies expressed an interest in this project and it is currently being discussed among potential partners. For more information, contact Ben Kampala at ben.kampala@total.com



PERF 2011-04: Effluent Treatment Plant Hazardous Air Pollutants

Proposed by Chevron

The object of this project is to improve understanding of biodegradation rates of key hazardous air pollutants in refinery effluent treatment systems through a Petroleum Environmental Research Forum (PERF) project to support advocacy. This project will add value in the short term by aiding evaluation and advocacy efforts related to recent ICR and EPA draft Wastewater Uniform Standard. ICR submittals for Hazardous Air Pollutants (HAPs) from wastewater treatment were based on assumptions from the EPA RWET tool. We suspect real data and more accurate modeling would show much lower emissions than what the RWET tool calculated. This project will add value in the long term by enabling better understanding of degradation rates/air stripping of compounds in our effluent treatment plants which will enable more accurate modeling and performance prediction. In 2011, the project frame and scope were agreed upon by interested parties and a consultant was identified to perform the studies. The contract has been circulated to companies with expectation of execution by 1Q 2011 and completion by middle of 2012. For more information, please contact Jim Russell at Jim.Russell@chevron.com.





Project Proposals

continued

PERF 2011-02: Online Monitoring in Effluent Treatment Plants

Proposed by Chevron

The objective of this proposed PERF project is to increase refining wastewater treatment plant reliability and compliance assurance by sharing company experience on various on-line monitoring approaches, engaging vendors to understand the current state-of-the-art on-line monitoring equipment, and possibly testing monitoring systems at refineries. Project focus is on early warning monitoring (NH₃, TN, BOD, TOC, etc.) on the front end of an effluent treatment plant to increase operation reliability; and on the back end, process monitoring (DO, ORP, N/C ratio, etc.) to increase compliance assurance. The scope will be limited to more developed, ready-to-deploy on-line monitoring technologies. The project will commence shortly. To date 6 PERF members have expressed interest in joining the project. For more information, please contact Dong Li (dxli@chevron.com).



PERF 2011-01: Ultra Low Nutrient Control in Wastewater Effluents

Proposed by ExxonMobil

This program will explore technical options to achieve ultra-low nutrient discharge by both sharing existing methodologies for control / removal of nutrients from wastewater as well as summarizing the current state of the technologies and their feasibility specifically related to the petroleum industry. The goal is to identify cost-effective methodologies or end-of-pipe technologies to achieve low nutrient discharges. A third party contractor has been identified to assist with the technology study, the participation agreement has been distributed to interested participants, and the program is expected to kick off in early 2012.

For more information contact Meredith Gustafsson
meredith.b.gustafsson@exxonmobil.com





Project Updates

PERF 2010-07: Understanding Biodiesel in Total Petroleum Hydrocarbon (TPH). Championed by Chevron

This proposed PERF project will be the first approach to understanding the impact of biodiesel to EPA analytical methods for TPH-D measurement. This project will evaluate different extraction and chromatographic techniques to determine suitable modification on method 8015B. Project will work closely with commercial lab-TestAmerica USA for the method development as well as all interested petroleum industrial parties. The Project team are composed of Shell, TestAmerica(USA), Petrobras and Chevron. Project proposes to submit a modified analytical method to EPA under 40CFR136.4 and 40CFR210.21 to share findings with Federal Agency. Project team had finished the legal contract and detailed experiment design. The baseline experiments have initiated in 4Q of 2011 at TestAmerica USA-Pensacola Lab. To join the discussion, please contact Chevron's project coordinator-Deyuan(Kitty) Kong at deyk@chevron.com for details.

PERF project 2010-03: Drilling waste best practice/guidance Championed by Saudi Aramco

Following PERF meeting which took place in London on April, 2010, (15) PERF members and consultants have shown interest in participating in the proposed PERF project 2010-03 "Drilling waste best practice/guidance". The objective of the project is to develop comprehensive guidelines, helpful to all international drilling operators, for the management of Drilling and Workover wastes. These guidelines should build upon existing guidance documents from API, UNEP, etc.

A power point presentation describing the project idea, type, objective and scope was prepared and emailed to potential project members. After consolidating all of the members' comments, a conference call was conducted on September 20th, 2010. The level of interest and the type of contribution whether cost, information or hybrid were discussed through several emails. A second conference call will follow once the type of contribution of all interested companies is determined. Other interested companies should contact [Ramzi Hejazi, Saudi Aramco](mailto:ramzi.hejazi@aramco.com) ramzi.hejazi@aramco.com





Recent Events

84th PERF Fall Meeting – Emerging Environmental Challenges and Risks

The 84th Fall 2011 PERF meeting was hosted by ConocoPhillips November 9 and 10 at its Technology Center in Bartlesville, Oklahoma. The objectives of the meeting were to review current and emerging concerns related to water and air issues and identify gaps and possible PERF projects to address these needs. A total of 20 technical presentations were delivered.

This meeting was focused on challenges and issues related to water and air quality and emissions. A total of 74 registrants were received from oil and gas companies and consultancies located all over the world. The meeting agenda included three sessions spanning Wednesday, November 9 and Thursday morning, November 10. On Wednesday, the first session focused on produced water (hydraulic fracturing, produced water discharge issues, modeling & management and treating). The Wednesday late afternoon session focused on refinery water issues, and topics included N and P issues, biokinetic modeling, trace metal removal, and water reuse.

The third session was held Thursday morning and was focused on air quality and emissions. Topics included flare combustion monitoring, flaring issues and regulations, advanced modeling techniques, ICR refinery data collection and challenges in meeting certain air emission standards.

On Thursday afternoon, five breakout discussion sessions were held. Topics for these sessions were Upstream – Produced Water, Downstream-Waste Water, Downstream-Air and Emissions, Remediation/Risk Management and the Research Managers Face-to-Face discussion.

Some of the items discussed in the breakout sessions included a review of existing proposals (nutrient control in refinery wastewaters, emissions from waste water treatment plants, on-line analyzers for refinery waste water treatment plants), as well as new project ideas (removal of metals from refinery wastewater), and potential agenda items for a 2012 remediation workshop planned for early autumn. More information on this workshop will be available in spring 2012.

The research managers' group clarified reporting and representation issues as well as agreeing on a functional approach to meet the charter mission and objectives. Bill Hafker of ExxonMobil has taken on the lead role for this group.

As a result of the meeting and discussion groups, four pre-proposal ideas were developed and sign-up sheets circulated for various members to express potential interest. These included ideas for best available techniques for flare emissions and operations, improved air emission estimates from cooling towers, and model comparisons for produced water discharges.



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	+1 (703) 846-4629
Teamwork	Together we achieve the extraordinary!

The Petroleum Environmental Research Forum (PERF)* is a research and development joint venture, formed to provide a stimulus to and forum for the collection, exchange, and analysis of research information relating to the development of technology for health, environment & safety, waste reduction and system security in the petroleum industry. PERF is a non-profit organization of Members which are corporations engaged in the petroleum industry that recognize the importance of a clean, healthy environment and are committed to support cooperative research and development. PERF does not itself participate in research projects but provides a forum for Members to collect, exchange, and research information relating to practical and theoretical science and technology concerning the petroleum industry and a mechanism to establish joint research projects in the field.

**The name Petroleum Environmental Research Forum and its acronym PERF are registered service marks*

PERF External Group Liaisons

PERF encourages external groups such as trade associations, national laboratories, and research institutions to join as liaison members. PERF values the partnerships that we have with these external groups and they frequently join PERF projects and contribute valuable research

Liaison members appoint Representatives that have the right to attend and participate in meetings of PERF and its committees, but they do not have the right to vote or to serve as an officer of PERF. Liaisons are not required to pay the fee paid by Members

American Petroleum Institute (API)
 Centre of Documentation, Research and Experimentation on accidental water pollution (CEDRE)
 Department of Energy (USDOE)
 Energy & Environmental Research Center (EERC)
 Gas and Technology Institute (GTI)
 Lawrence Berkley National Laboratory (LBNL)
 Water Environmental Research Foundation (WERF)
 Argonne National Laboratory (ANL)
 Electronic Power Research Institute (EPRI)
 International Association of Oil and Gas Producers (OGP)
 Oak Ridge National Laboratory (ORNL)
 RTI International
 University of Manchester Institute of Science and Technology (UMIST)
 VITO - Flemish institute for technological research
 World Ocean Council (WOC)

Member Companies & Representatives

Amerada Hess Co.	Gerry Bresnick
Saudi Aramco	Ramzi F. Hejazi
BP	Dave Fashimpaur
	Todd Ririe
Chevron	Veronica R. Blackwell
ConocoPhillips	Bruce Randolph
Eni, S.p.A.	Ezio D'Addario
ExxonMobil	Meredith Gustafsson
	Heide Mairs
INA-Naftaplin	Domagoj Zelic
Petro-Canada	Doug Evans
Petrobras	Paulo Negrais Seabra
Repsol YPF	Marta García Ariza
Shell	Karen G. Haynes
Statoil	Nina Aas
Suncor	Gary Geisbrecht
Syncrude	Warren Zubot
Total	Frederic Perie

Associate Members & Representatives

Canadian Petroleum Products Institute (CPPI)	Adolfo Silva
CH2M Hill	Rebecca Carovillano
Champion Technologies, Inc.	Ashley Dunham
Nalco	Jeff Gardenhire
Questor	Wilson McGarel
Veolia Water	Karim Essemiani